

# Dios DS1820 Thermometer Functions

**Note:** This library is not compatible with the DS18B20 chip. You must use a DS1820, DS1820S or DS18S20 chip with these libraries.

The DS1820 is a 1Wire Device that can deliver very high precision temperatures yet will only use a single IO port on your microcontroller.

These functions are used to access the DS1820 High Precision Digital Thermometer. We show both external power mode and parasite mode. While the parasite mode only requires 2 wires it is good for remote applications but has a slower conversion rate.

For Celsius to Fahrenheit conversions use the CelsiusToF function.

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## DS1820quicktemp

DS1820quicktemp(port,mode,addr)  
*DS1820quicktemp(iexp,iexp,iexp) as integer*

### Description

Returns a 1-byte integer value of the temperature in centigrade. The resolution is 1 degree Celsius.

- **port** - Dios IO port connected to the slave device data pin.
- **mode** - Determines parasite and Rom match.
  - 0: No parasite, No Rom Match (Single Device on Bus).
  - 1: Parasite Mode, No Rom Match (Single Device on Bus).
  - 2: No Parasite, Rom Match (You must pass string with 8 bytes of address data).
  - 3: Parasite Mode. Rom Match (You must pass string with 8 bytes of address data).

If Parasite mode is active you must tie pins 1 and 3 together and wire to Vss.  
If Parasite mode is not active Vss is applied to pin 1 and Vcc to pin 3.  
If Rom Match is active the passed string must match a device to read it.  
If Rom Match is not active only one device can be active on the bus.

- **addr** Is an 8-byte string that contains the address of the device you wish to talk to.

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## DS1820readtemp

DS1820readtemp(port,mode,addr)  
*DS1820readtemp(iexp,iexp,iexp) as float*

### Description

Returns floating point value of the temperature in centigrade. The resolution is .1 degree Celsius.

- **port** - Dios IO port connected to the slave device data pin.

- **mode** - Determines parasite and Rom Match

- 0: No parasite, No Rom Match (Single Device on Bus).
- 1: Parasite Mode, No Rom Match (Single Device on Bus).
- 2: No Parasite, Rom Match (You must pass string with 8 bytes of address data).
- 3: Parasite Mode. Rom Match (You must pass string with 8 bytes of address data).

If Parasite mode is active you must tie pins 1 and 3 together and wire to Vss.

If Parasite mode is not active Vss is applied to pin 1 and Vcc to pin 3.

If Rom Match is active the passed string must match a device to read it.

If Rom Match is not active only one device can be active on the bus.

- **addr** Is an 8-byte string that contains the address of the device you wish to talk to.

#### 'DS1820 Library Example

```
func main()
```

```
  dim celsius as float
```

```
  dim fahrenheit as float
```

```
loop:
```

```
  celsius=DS1820readtemp(13,1)
```

```
  fahrenheit = CelsiusToF(celsius)
```

```
  print {-0.2} celsius,"C ",fahrenheit,"F"
```

```
  goto loop
```

```
endfunc
```

```
include lib\Dios1820.lib
```

```
include lib\Dios1620.lib
```

